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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,075	03/24/2004	Anandraj Sengupta	140286-1	7093

6147 7590 10/10/2006

GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER	
MILLER, ROSE MARY	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/808,075	SENGUPTA, ANANDRAJ	
	Examiner	Art Unit	
	Rose M. Miller	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-21* is/are rejected.

7)☒ Claim(s) *8 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-7 and 9-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the sensors comprising ultrasonic sensors, does not reasonably provide enablement for the sensors comprising either microwave (gamma) sensors, electromagnetic sensors, or optical sensors. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Applicant's specification clearly indicates the sensors utilized in the invention are to be ultrasonic sensors. However, the claims, as they are now presented, are not limited to utilizing ultrasonic sensors. There is no recitation how microwave, electromagnetic, and/or optical sensors would be attached to the outer region of the rolling object and utilized to generate a condition of a region on the three dimensional volume under test. The broad use of the term "sensor" allows for any sensor, including those not yet developed, to be utilized in the invention. A suggestion for correction is to incorporate the ultrasonic sensor into the main independent claims.

Allowable Subject Matter

3. Claims 8 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest an inspection system comprising, in combination with the other recited elements, at least one ultrasonic sensor coupled to a rolling object, the ultrasonic sensor being disposed on a non-contact outer region (or side wall) of the rolling object and at a predetermined distance from a center of the rolling object, wherein the at least one ultrasonic sensor is configured to generate signals representative of a condition of a region on the three dimensional volume.

The prior art teaches three ways of placing an ultrasonic sensor on a rolling object or roller. The first way is when the transducer is the rolling object or placed on the contacting region of the roller such that the transducer is in direct contact with the object under test. Examples of this are found in **Miller (US 3,771,354)** and **Baum et al. (US 4,291,577)**, A second roller or wheel probe is formed by placing the ultrasonic sensor within the wheel with a solid coupling between the sensor and the outside of the roller in order to form the acoustic coupling between the sensor and the object under test. **Dickson (US 4,519,251)** is a great example of this form of ultrasonic wheel probe. The final wheel probe, or rolling sensor, is formed by placing the ultrasonic sensor inside the wheel, either on the axle or spaced from the axle, with a liquid coupling between the ultrasonic sensor and the tire wall in order to form the acoustic coupling between the sensor and the object under test. These systems are especially good at testing railroad tracks as shown by the US Patents **Pagano (US 4,165,648)**, **Havira et al. (US 5,419,196)**, and **Martens (US 6,055,862)**. There is no teaching in any of these of placing the ultrasonic sensors on the outer, non-contacting region of the roller or wheel (or sidewall).

Response to Arguments

5. Applicant's arguments filed 03 July 2006 have been fully considered but they are not persuasive.

Applicant argues the following:

> *Claims 1-7, and 9-21 were rejected under 35 U.S.C. §112 first paragraph, and Claims 8 and 22 were objected to. Claims 1-22 remain pending in the present application. Applicant respectfully requests reconsideration of the application by the Examiner in light of the following remarks.*
>
> *Applicant respectfully traverses the rejection of claims 1-7 and 9-21 under 35 USC §112, first paragraph. The Office Action asserts that the specification, while being enabling for the sensors comprising ultrasonic sensors, does not provide reasonable enablement for the sensors comprising other sensors, which the Examiner listed as including microwave sensors, electromagnetic sensors or optical sensors.*
>
> *Applicant respectfully submits that the claims recite (and the specification enables) any sensor configured to generate signals representative of a condition of a region on the three dimensional volume. The sensor is to be coupled to a rolling object and is to be disposed on a non-contact outer region of the rolling object and at a pre-determined distance from a center of the rolling object. Although, in paragraph 11 of the specification, Applicant recites that in one embodiment the sensors used comprise ultrasound sensors, any sensor that can generate signals representative of a three-dimensional volume can be used.*
>
> *MPEP §2164.01(b) recites that as long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 USC §112 is satisfied (See, in Re Fischer, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970)). Further, MPEP §2164.01 (b) recites that failure to disclose other methods by which the claimed invention may be made does not render a claim invalid under 35 §USC 112 (See, in Re Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 1533, 3 USPQ2d 1737, 1743 (Fed. Cir.), cert. denied, 484 U.S. 954 (1987)).*
>
> *Applicant respectfully submits that the specification enables an ultrasonic sensor and that the sensors of the type recited in Applicant's claims are not in an "unpredictable art" in the same way that a chemical invention might be categorized. If a sensor is configured to generate the signal, there is no reason to believe that it cannot be attached and used in the same manner as the described ultrasonic sensor. Therefore, Applicant respectfully submits that the description of the ultrasonic sensor bears a reasonable correlation to the entire scope of claims 1, 11 and 16. The mere fact that other embodiments by which the claimed invention may be made are not described in similar detail in the specification does not render claims 1, 16 and 22 invalid under 35 USC §112.*

Accordingly, withdrawal of the 35 USC §112 rejections is respectfully requested, and Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

It is true that as long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable (emphasis added by Examiner) correlation to the entire scope of the claim, then the enablement requirement of 35 USC § 112 is satisfied. However, Applicant is also required to show one of ordinary skill in the art how to fully make and/or use the claimed invention. By utilizing the broad term "sensor", Applicant is saying that any sensor can be used in the claimed invention. Applicant has not shown how the sensors listed in the rejection, i.e. microwave sensors, electromagnetic sensors, and/or optical sensors, can be utilized in place of the disclosed ultrasonic sensor. Each of the listed sensors has its own features, problems, and/or pre-cautions that must be followed. It would be another matter if one of ordinary skill in the art could simply substitute one sensor for the other in Applicant's invention without any modifications to Applicant's invention but that is not the case is this instance. Therefore, the rejection stands and is made final.

Furthermore, Applicant must show possession and/or conception of the claimed invention. There is no suggestion that Applicant desired the use of any of sensor other than the disclosed ultrasonic sensor. Therefore, Applicant specification is not fully supportive of the entire scope of the claimed invention and the rejection under 35 USC § 112, 1st paragraph stands.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M. Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RMM
8 December 2005

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800